TEACH COMMON CORE STANDARDS
WITH THE EEI CURRICULUM

Created with your needs in mind, this document shows the correlation between the EEI Curriculum and the California Common Core State Standards. By teaching the EEI unit lessons in your classroom, you will be simultaneously addressing the Common Core standards depicted in this guide.

2.3.a. and 2.3.b.—The Earth Rocks

In this unit, students learn properties of rocks and minerals, how rock types and mineral content may change, and how people of past and present use rocks in important ways. Students gain further understanding by reading historical fiction, interpreting charts and graphs, closely observing indoor and outdoor surroundings, and engaging in active study and discussion of pictures, illustrations, and posters depicting rocks and minerals. At the conclusion of the unit, students are able to identify several properties of rocks and minerals, identify ways these properties change, show the influence the properties have on the rock or mineral's use, and understand that people depend on rocks and minerals in many ways.

LESSONS	RI.2.1	RI.2.2	RI.2.3	RI.2.4	RI.2.5	RI.2.6	RI.2.7	RI.2.10	RF.2.3	W.2.2	W.2.7	W.2.8	SL.2.1	SL.2.2	SL.2.3	SL.2.6	L.2.1	L.2.4	L.2.6
California Connections	✓	✓		✓		✓	✓	✓	✓					✓					
1	✓	✓		✓		✓	✓	✓	✓					✓				✓	
2					✓	✓	✓		✓				✓	✓				✓	✓
3	✓								✓		✓	✓	✓			✓	✓	✓	✓
4	✓								✓		✓	✓	✓			✓	✓	✓	✓
5					✓				✓			✓	✓	✓				✓	
6			✓	✓		✓						✓	✓		✓			✓	
Traditional Assessment										✓		✓							
Alternative Assessment	✓									✓			✓						

COMMON CORE STANDARDS

Note: *For your reference, the list of California Common Core State Standards abbreviations is on the following page.*

Using the EEI-Common Core Correlation Matrix

The matrix on the front page identifies a number of Common Core standards that are supported by this EEI unit. However, the check marks in the matrix do not necessarily signify that the Common Core standards checked will be taught to mastery by using this EEI unit alone. Teachers are encouraged to select which Common Core standards they wish to emphasize, rather than teaching to every indicated standard. By spending more time on selected standards, students will move toward greater Common Core proficiency in comprehension, critical thinking and making reasoned arguments from evidence. Teaching this EEI unit will provide opportunities for teachers to implement the shift in instructional practice necessary for full Common Core implementation.

California Common Core State Standards Abbreviations

- **CCCSS:** California Common Core State Standards
- **L:** Language Standards
- **RF:** Reading Foundational Skills Standards
- **RI:** Reading Standards for Informational Text
- **SL:** Speaking and Listening Standards
- **W:** Writing Standards

Note: *Since each Common Core standard includes a breadth of skills, in this correlation, the portion of the standard description that is featured in the Common Core Standards and Applications is cited, using "…" to indicate omitted phrases. For a list of the complete standard descriptions, please see the Common Core Reference Pages located on pages 21–22 of this document.*

A Note about Common Core Speaking and Listening Standards

Many of the EEI units provide various learning structures, materials, and groupings that lead toward students working in pairs or small groups to discuss concepts and ideas. This supports the skill in Speaking and Listening Standard 1 "Participate effectively in a range of collaborative discussions (one-on-one, groups…) with diverse partners." With prior instruction in collaborative discussion techniques, students can be placed in pairs or small groups to discuss the lesson topics. To aid in teacher planning, the lessons are listed below along with their learning structures for whole class, pairs/partners, and/or small groups:

- **Lesson 1:** Whole class
- **Lesson 2:** Whole class, small group
- **Lesson 3:** Small group
- **Lesson 4:** Whole class, small group
- **Lesson 5:** Whole class, small group
- **Lesson 6:** Whole class

National Geographic Resources

No maps or posters are used with this unit.

Unit Assessment Options

Assessments	Common Core Standards and Applications
Traditional Assessment	
Students answer fill-in-the-blank, short answer, and chart completion tasks.	**W.2.2:** Write informative/explanatory texts… **W.2.8:** Recall information from experiences or gather information from provided sources to answer a question. ***Suggestion:*** *To increase student application of CCCSS W.2.2, add directions to the short answer questions that instruct students to write a paragraph that introduces the topic, uses facts and definitions to explain their points, and provides a concluding statement at the end.*
Alternative Assessment	
Students work in small groups to create and label a poster of a habitat with at least five ways that rocks are being used. They will orally present their work with the encouraged use of "word wall" words.	**RI.2.1:** Ask and answer such questions as *who, what, where, when, why* and *how* to demonstrate understanding of key details in a text. **SL.2.1:** Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups. **W.2.2:** Write informative/explanatory texts…

Lesson 1: The Rocky Earth

Students read a book, practice using vocabulary words, and participate in a discussion. They review the story by interpreting a chart listing the uses of rocks and minerals in ***California Connections: Sarah's Spring***. Students complete a writing exercise in class or as homework.


Lesson 1

The Rocky Earth

Learning Objective

Key Vocabulary

Use this correlation in place of the **Procedures** on pages 44–45 of the Teacher's Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the **Dictionary Workbook** and the vocabulary **Word Wall Cards** to introduce new words to students as appropriate. Ask students to write their name in the space provided in the dictionary. These documents are provided separately. ***Tip:* Word Wall Cards** *may be used at the beginning, as the words come up in the lesson, or as a review at the end.* ***Tip:*** *If* **Dictionary Workbooks** *need to be reused from year to year, students should not write in them.*	**L.2.4e:** Use glossaries and beginning dictionaries…to determine or clarify the meaning of words and phrases **in all content areas. CA** **RF.2.3:** Know and apply…word analysis skills…**both in isolation and in text…CA**
Step 1	
Tell the class that in this unit they will learn about rocks and how plants, animals, and especially people depend on rocks in different ways. Explain that today they will read a story that will show some ways that people used rocks in the past. Distribute a copy of the ***California Connections: Sarah's Spring*** reader to each student. Tell students the story is fiction. The characters in the story are not real, but the places they go are real. Read the title page and the **Word Watch!** page with students. As you review each definition, post the **Word Wall Cards** for "gold," "iron," "pebble," "rock," and "boulder" below the headings on the prepared **Ways People Used Rocks and Minerals Chart.**	**RF.2.3:** Know and apply…word analysis skills…**both in isolation and in text…CA** **RI.2.7:** Explain how specific images…contribute to and clarify a text. ***Suggestion:*** *After reading the* ***California Connections*** *selection, return to the diagrams and have students explain how the diagrams contribute to understanding and clarifying the text.* **SL.2.2:** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
Step 2	
Briefly review the map of Sarah's family's travels, pointing out important landmarks, such as Chimney Rock, Scotts Bluff, and Independence Rock. Show the class **Chimney Rock** (Information Card #1) when pointing out its location on the map. Read Chapter 1 in the ***California Connections: Sarah's Spring*** reader with the class.	**RI.2.2:** Identify the main topic of a multiparagraph text…

Procedures	Common Core Standards and Applications
Step 3	
Use the following questions to facilitate a class discussion and complete the **Ways People Used Rocks and Minerals Chart:** ■ Why were most of the young men in Sarah's group going to California? (*They were going to find gold.*) Explain that gold is a mineral and is the reason many people traveled to California long ago. Write "reason for moving to California" in the box next to the **World Wall Card**, "Gold," on the class chart. ■ What did the pioneers use that was made out of iron? (*The pioneers used a flat iron oven and big iron pots.*) Write "flat oven" and "iron cooking pots" in the box next to the **World Wall Card**, "Iron," on the class chart. ■ How did having the iron pots help the people? (*The people cooked their meals in the pots. The pots were strong and hard and did not break on the bumpy trail.*) ■ Sarah wrote often about the boulders and rock formations they saw along the way. Why were these things important to the pioneers? (*The rocks and boulders helped the people know they were going the right way.*) Write "trail markers" in the box next to the **World Wall Card**, "Boulder," on the chart. ■ What are some of the ways that the pioneers used rocks to help them during their long trip? (*They were used as tools, brakes, fire walls, route markers.*) Write "wheel blocks" and "fire wall" in the box next to the **World Wall Card**, "Rock," on the class chart.	**RI.2.6:** Identify the main purpose of a text, including what the author wants to answer, explain, or describe. ***Suggestion:*** *Ask students to listen for how the author explains the "big idea" of ways that people used rocks and minerals.*
Step 4	
Read Chapter 2 in the ***California Connections: Sarah's Spring*** reader with the class. Facilitate a class discussion with the following questions: ■ What did Sarah and Mary practice writing their names on? (*Slates, dirt, air*) ■ A slate is a kind of rock. How else did the people use rocks in this chapter? (*Route markers, safety in a storm, warm the bedding, replace missing game pieces*.) Write "game pieces" in the box next to the **Word Wall Card,** "Pebble," and add "*bed warmer*" in the box next to the **Word Wall Card,** "Rock." ■ How did rocks make the trip harder for the pioneers? (*Sometimes the rocks made the road too rough to travel. The people needed to take a longer route to get around the rocky areas.*)	**RI.2.1:** Ask and answer such questions as *who, what, where, when, why*, and *how* to demonstrate understanding of key details in a text. **RI.2.4:** Determine the meaning of words and phrases in a text relevant to a *grade 2 topic or subject area*… ***Suggestion:*** *Ask students to identify the parts in the sentence that helps them figure out the meaning of these words:* ■ *Page 6: boulder* ■ *Page 8: mineral* ■ *Page 9: Scott's Bluff* ■ *Page 26: spring*

Procedures	Common Core Standards and Applications
Step 5	
Read Chapter 3 in the ***California Connections: Sarah's Spring*** reader with the class. Facilitate a class discussion with the following questions: ■ How did the people use rocks in this chapter? (*Jesse wrote with a rock.*) Add "*writing tool*" in the box next to the **Word Wall Card,** "Rock," on the class chart. ■ In the story, Sarah saw water coming out of the rocks on the side of a hill. What is this called? (*A spring*) How did she describe the water that came from the spring? (*Clean, cold, good tasting*) ■ Do people drink spring water today? (*Yes*) ■ Did the story end the way you predicted it would end? (*Answers will vary*) ■ Think of all of the ways rocks were used in the story. Do we use rocks in any of those ways today? If so, how? (*Rocks were used to block wagon wheels in the story; we use rocks to keep doors from blowing shut. We can use rocks to write on other rocks or the sidewalk outside. We still play games with rocks. When we go camping, we use rocks to keep us safe from the fire.*)	**RI.2.1:** Ask and answer such questions as *who, what, where, when, why*, and *how* to demonstrate understanding of key details in a text. **RI.2.6:** Identify the main purpose of a text, including what the author wants to answer, explain, or describe. ***Suggestion:*** *Ask students to listen for how the author explains the "big idea" of how people use rocks in this story.*
Step 6	
Distribute a **Student Workbook** to each student. Tell students to turn to **Sarah's Spring Chart** (Student Workbook, page 2). Read over the instructions with students and give them time to complete their work. *Tip: If* **Student Workbooks** *need to be reused from year to year, students would not write in them. Some strategies teachers use to preserve the workbooks are:* ■ *Have students use binder paper or other lined or unlined paper.* ■ *Have students use a sheet protector over the page and write with a whiteboard marker.* ■ *Do together as a class on a projector or chart paper.* ■ *Project the digital fill-in version and do together as a class.* ■ *Students use digital devices to fill in the digital version found on the website.* ■ *Make student copies when necessary. This is especially useful for preserving colored pages.* ■ *Laminate the color photos and cut into strips that students place over their black and white copy.* Gather the ***California Connections: Sarah's Spring*** readers. Collect **Student Workbooks** and use **Sarah's Spring Chart** for assessment.	**RI.2.1:** Ask and answer such questions as *who, what, where, when, why*, and *how* to demonstrate understanding of key details in a text. **RI.2.10:** …read and comprehend informational texts, including…science…texts…proficiently…

Lesson 2: The Earth Rocks

Students examine the roles of rocks in coastal and pine forest ecosystems. They look at ecosystem posters, read related text, and act out behaviors of some of the animals and plants that use rocks in these ecosystems.

Use this correlation in place of the **Procedures** on pages 54–55 of the Teacher's Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the **Dictionary Workbook** and the vocabulary **Word Wall Cards** to introduce new words to students as appropriate.	**L.2.4e:** Use glossaries and beginning dictionaries…to determine or clarify the meaning of words and phrases **in all content areas. CA** **RF.2.3:** Know and apply…word analysis skills…**both in isolation and in text…CA**
Step 1	
Remind students that during the last lesson, they learned how rocks can help people. Today, they will learn how rocks can also help plants and animals. Project **Mossy Rocks in Stream** (Visual Aid #1). Tell students that moss is a type of plant. Ask how the moss is using the rocks. (*The moss is growing on the rocks.*) ***Tip:*** *Download Visual Aids from http://californiaeei.org for easy access during the lesson.*	n/a
Step 2	
Point out the **California's Rocky Coast** poster. Explain that rocks are very important to many habitats in this ecosystem. Draw students' attention to the **California Rocky Coast Habitat** (Information Cards #2–10) placed around the poster. Explain that each card matches one of the photos on the poster. (*Note: An Answer Key and Sample Answers for* ***California's Rocky Coast*** *poster matches are provided on page 56.*) Read each information card aloud. Ask students to identify which photograph on the **California's Rocky Coast** poster matches the information on the card. After students respond correctly, connect each information card to the appropriate photograph inset using a piece a string or yarn and tape or thumbtacks. (*Note: Select Steps 2 and 3 or Steps 4 and 5, or if time permits, complete the exercise with both ecosystems.*)	**RI.2.6:** Identify the main purpose of a text, including what the author wants to answer, explain, or describe. **RI.2.7:** Explain how specific images…contribute to and clarify a text. ***Suggestion:*** *Ask students to explain why certain pictures were included in the posters. (They show how the bird, the seal, the worm, etc. uses the rock.) Ask students what pictures they would add to the posters if they were creating it, and tell why.* **SL.2.1b:** Build on others' talk in conversations by linking their comments to the remarks of others.

Procedures	Common Core Standards and Applications
Step 3	
Facilitate a class discussion with the following questions: ■ What living things in the tidepools need rocks? (*Hermit crabs, limpets, worms, mussels, shore birds, seaweed, barnacles, sea stars*) ■ How are the shorebirds using the rocks in the tidepool habitat? (*As a place to find food.*) ■ How are the hermit crabs, limpets, worms, mussels and other animals and plants using the rocks in the tidepool habitat? (*They live and find food there. Some anchor their bodies to the rocks so they are not pulled out to sea.*) ■ How does the seaweed use the rocks in the tidepool habitat? (*The seaweed grows on the rocks.*) ■ How do California sea lions and the elephant seals use the rocks in this habitat? (*They rest and find food there. Their pups are born on the coast and nearby islands.*) ■ What are some of the nonliving things found in this habitat? (*Rocks, water, sand*)	**SL.2.1:** Participate in collaborative conversations with diverse partners… a) Follow agreed upon rules for discussions… b) Build on others' talk in conversations by linking their comments to the remarks of others.
Step 4 *(Optional)*	
Point out the **California's Pine Forest** poster. Draw students' attention to the **California Pine Forest Habitat** (Information Cards #11–19) you have placed around the poster. Explain that, as with the tidepools along California's rocky coast, rocks are very important to the forest ecosystem. (*Note: An Answer Key and Sample Answers for **California's Pine Forest** poster matches are provided on page 57.*) Read each information card aloud. Ask students to identify which photograph on the **California's Pine Forest** poster matches the information on the card. After students respond correctly, connect each information card to the appropriate photograph inset using a piece a string or yarn and tape or thumbtacks.	**SL.2.1:** Participate in collaborative conversations with diverse partners… a) Follow agreed upon rules for discussions… ***Suggestion:*** *Have students work in small groups of 2 to 4 to discuss possible answers and respond to teacher questions.*
Step 5 *(Optional)*	
Facilitate a class discussion with the following tasks and questions: ■ Identify some of the living things that are using rocks in this ecosystem. (*Earthworms, lichen, butterflies, pine trees and other plants, coyotes, bears, deer, pika, trout, birds, squirrels, insects, spiders*) ■ What kinds of things are living under the rocks? (*Earthworms, insects, snakes, mice, lizards, salamanders*) ■ What roles do the rocks play in this habitat? (*The rocks protect the living things. They provide places for animals to sun themselves and to eat. Rocks keep the soil in place.*)	**SL.2.1:** Participate in collaborative conversations with diverse partners… a) Follow agreed upon rules for discussions… ***Suggestion:*** *After the class discussion, have students work in small groups of 2 to 4 to list as many living things as they can think of (that are not shown in the poster) that use rocks in a pine forest.*

Procedures	Common Core Standards and Applications
Step 6	
Organize students into groups of four. Using the second set, distribute one **California Rocky Coast Habitat** information card to each group. (*Note: Leave the original set of information cards in place near the poster.*) Have each group of students use the clues on their card to act out their animal. (*For example, to imitate the snowy egret, students could walk stiffly while wiggling their feet, showing how this bird looks for its food.*) Give the groups five minutes or less to practice their pantomimes, then call the class together. Ask one group at a time to act out their animal without telling what animal they are pantomiming. Have the rest of the class identify what animal the group is acting out. Continue until all groups have had a chance to act out their animal. Gather the **California Rocky Coast Habitat** information cards.	**SL.2.2:** Recount or describe key ideas or details from… information presented… **a) Give and follow three- and four-step oral directions…CA**
Step 7	
Redistribute the students' individual **Student Workbooks**. Tell them to turn to **Rocks in Natural Systems** (Student Workbook, page 3). Explain that this chart is a place for students to record the information they learned from the posters and **Habitat Information Cards** about the ways rocks are important in ecosystems. Review the chart and the instructions with the class. Encourage students to walk up and look closely at the **California's Rocky Coast** and/or **California's Pine Forest** posters and the related information cards. Instruct students to select one ecosystem, gather information from the poster and information cards, and complete their chart. Collect **Student Workbooks** and use **Rocks in Natural Systems** for assessment.	**L.2.6:** Use words and phrases acquired through conversations, reading and being read to, and responding to texts… **RI.2.5:** Know and use various text features…to locate key facts or information in a text efficiently.

Lesson 3: Change, Change, Change

Students participate in hands-on science activities exploring how rocks change in size, shape, and make-up in nature. They connect the function of small rocks to the filtering of water in springs and to the spawning practices of salmon.


Lesson 3

Change, Change, Change

Lesson 3

Learning Objective

Key Vocabulary

Background

Use this correlation in place of the **Procedures** on pages 76–77 of the Teacher's Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the **Dictionary Workbook** and the vocabulary **Word Wall Cards** to introduce new words to students as appropriate.	**L.2.4e:** Use glossaries and beginning dictionaries…to determine or clarify the meaning of words and phrases **in all content areas. CA** **RF.2.3:** Know and apply…word analysis skills…**both in isolation and in text…CA**
Step 1	
Remind the class that during the last lesson, they learned that plants and animals depend on rocks to live. Today they will learn that smaller rocks come from larger rocks, and that these smaller rocks and sand are important to natural systems (ecosystems.) Organize students into small groups of three or four students. Give each group a set of rocks to examine. Remind students that rocks are solid materials that are a mixture of minerals. Tell students to sort the rocks into two piles. In the first pile they should put the rocks they think were found in the ground. In the other pile they should put the rocks they think were found in the water. Suggest they use their sense of touch when examining the rocks, and that they use these observations to guide them as they sort. As a class, share the results. Ask students the following questions: ■ How do the rocks found in the water feel? (*Smooth*) ■ How do the rocks found in the ground feel? (*Rough*) ■ Why are the river rocks smooth? (*The water changed them from rough to smooth.*)	**L.2.6:** Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe… **SL.2.1:** Participate in collaborative conversations… **SL.2.6:** Product complete sentences when appropriate to task and situation in order to provide requested detail or clarification… ***Suggestion:*** *Student should use their sense of touch when examining the rocks, and use these observations to guide them as they sort. As a class, share the results.* ***Suggestion:*** *If needed to guide language development with complete sentence structures, provide sentence frames to guide student responses:* *One difference I see/feel is _____.* *Another difference I see/feel is _____.* *One similarity I see/feel is _____.* *Another similarity I see/feel is _____.*
Step 2	
Project **Weathering** (Visual Aid #2) and point out the different shapes and sizes of rocks. Tell students that Earth is made up of rock and that rocks are always changing. Several things in nature change rocks. Both water and air can wear away and break apart rock. Explain that this process is called "weathering." Weathering can change the shape and size of a rock. Chemicals in water can change the color of a rock.	n/a ***Suggestion:*** *Clarify that air alone cannot weather rock.*

Procedures	Common Core Standards and Applications
Step 3	
Redistribute a copy of the ***California Connections: Sarah's Spring*** reader to each student. Tell students to look at the picture of Chimney Rock on page 7. Ask students to imagine what the rock looked like when the top of Chimney Rock was as wide as the bottom. Explain that no one knows for sure how long it took for the rain and air to break down the rock. Scientists do know that in the more than 150 years since people began writing about Chimney Rock, it has only gotten slightly smaller. Have students look at the other illustrations in the book. Can they see evidence that water and air have changed the rocks?	**SL.2.1:** Participate in collaborative conversations with diverse partners… a) Follow agreed upon rules for discussions… ***Suggestion:*** *Have students work in small groups of 2 to 4 to discuss possible answers and respond to teacher questions.*
Step 4	
Project **Distant View of Mt. Ritter** (Visual Aid #3). Explain that the photograph was taken in the Sierra Nevada from a distance. Ask students to describe the rock. (*Students are likely to say that the mountain looks like one big chunk of rock; they may also mention the snow on the mountain.*) Project **Close-Up View of Mt. Ritter** (Visual Aid #4). Ask students to describe what they see in **Close-Up View of Mt. Ritter**. (*The huge chunk of rock or mountain is actually many smaller chunks of rock.*) Ask students how Sarah described the weather while they were climbing the mountains. (*Rain and snow; hot and cold.*) Ask what things in nature broke or changed the rock into the smaller chunks of rock. (*Water from the rain and snow; the hot and cold air.*)	**L.2.6:** Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe… **SL.2.6:** Produce complete sentences… ***Suggestion:*** *Students could write brief descriptions of each view of Mt. Ritter using sentence frames for each visual aid.* ■ *Mt. Ritter looks like <u>one</u> chunk of rock.* ■ *The mountain has <u>snow</u> on it.* ■ *The mountain is actually made up of <u>many</u> smaller chunks of <u>rock</u>.*
Step 5	
Project **Magnified Sand** (Visual Aid #5). Explain that this photograph shows sand magnified 200 times. Ask students if they can see the tiny bits of rock that make up the sand. Project **Quartz** (Visual Aid #6). Ask students to locate bits of quartz in the sand.	**SL.2.1b:** Build on others' talk in conversations by linking their comments to the remarks of others.
Step 6	
Distribute a magnifying glass to each student. Demonstrate the proper use of a magnifying glass, explaining that students should put the lens close to their eye rather than close to the object they are looking at. Distribute a teaspoon, a cup of sand, and a small paper plate to each group. Tell students to place one teaspoon of sand on the paper plate. Have students examine the sand with the magnifying glass. Ask if they can see the same things in the sand that they saw in the photos. Ask, "How did these rocks get so small?" (*Through the process of weathering*)	**SL.2.6:** Produce complete sentences… **W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.

Procedures	Common Core Standards and Applications
Step 7	
Explain that weathering of rocks is very important because many living things, including people, depend on rocks of all sizes. Remind students how important it was that Sarah found the spring after weeks in the desert. Ask students, "Where did Sarah find the clean drinking water? (*Water was coming up out of the rocks.*) Explain that there is a lot of water underground. In some places, water moves through cracks in the rocks and flows to the surface in springs. Tell students that, as water passes through layers of different sized rocks and sand, the layers act like filters and clean the water. Tell students that cleaning the water and making a path for it to come out of the ground are two ways small rocks and sand play an important role in providing clean drinking water from underground.	**W.2.7:** Participate in shared research and writing projects (…record science observations). ***Suggestion:*** *Guide students to draw a simple diagram of water sinking down through the ground. Title it, "How Earth Gets Clean Water". Have students include different sized rocks and sand below the surface of the earth.* ■ *Label the rocks and the sand.* ■ *Label the surface of the earth (line of horizon).* ■ *Label the water.* ■ *Label the air.*
Step 8	
Project **Salmon Spawning** (Visual Aid #7). Ask students to describe the rocks along the bottom of the river. Tell students the fish is a salmon. Salmon are very picky about where to lay their eggs. They look for a river bed with many small rocks like the one in the photograph. The fish uses its tail to push aside some of the rocks and lays its eggs in the gravel and sand below. The small rocks protect the eggs from being washed away with the movement of the water. Ask, "Do you think that salmon lay their eggs on big rocks? What would happen to them?" (*No. The salmon could not move large rocks with their tails. They could not make nests. Without the small stones, the eggs could be washed away with the movement of the water.*)	**L.2.1e:** Use adjectives and adverbs… **RI.2.1:** Ask and answer such questions as *who, what, where, when, why*, and *how* to demonstrate understanding of key details in a text. **SL.2.6:** Produce complete sentences… ***Suggestion:*** *Before moving to Step 9, ask students to whisper answers to a partner for the following questions:* ■ *Who is in the picture? (salmon)* ■ *Where are they? (In a stream)* ■ *What are they doing? (Looking for a good place to lay their eggs)* ■ *Why are the rocks important? (They need the small stones to make their nests.)*
Step 9	
Redistribute the students' individual **Student Workbooks**. Tell them to turn to **Small Rocks Matter** (Student Workbook, page 4). Read the instructions to students and give them time to complete their work. Gather the ***California Connections: Sarah's Spring*** readers. Collect **Student Workbooks** and use **Small Rocks Matter** for assessment.	**W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.

Lesson 4: Putting Rocks to Work

Students examine photographs and participate in a class discussion about human uses of rocks. They conduct a school scavenger hunt and record their findings on a chart. Students complete and interpret a bar graph and apply their learning to a new human system setting.


Lesson 4

Putting Rocks to Work

In Lesson 4, students learn about the importance of rocks in humans and human communities. They investigate the many different ways people use rocks, and learn about the physical properties of rocks.

Learning Objective

Key Vocabulary

Use this correlation in place of the **Procedures** on pages 90–92 of the Teacher's Edition.

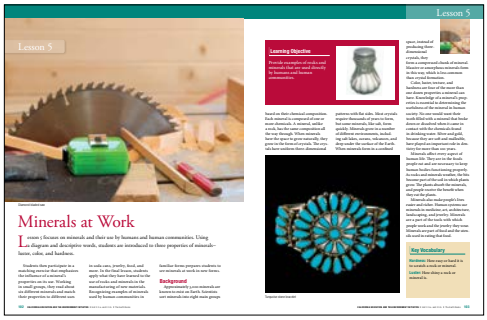
Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the **Dictionary Workbook** and the vocabulary **Word Wall Cards** to introduce new words to students as appropriate.	**L.2.4e:** Use glossaries and beginning dictionaries…to determine or clarify the meaning of words and phrases **in all content areas. CA** **RF.2.3:** Know and apply…word analysis skills…**both in isolation and in text…CA**
Step 1	
Hold up a rock and ask students to describe how it looks. Prompt students' responses as necessary by asking whether it is a light color or a dark color, large or small, shiny or dull. Pass the rock around to a few students and ask them to describe how it feels. Ask whether it is rough or smooth, hard or soft. Explain that students are describing the rock's "properties" and that these properties can help tell what kind of rock it is. Explain that rocks are made of minerals. Like rocks, minerals like gold can be found on the ground, in the ground, and even in water. However, people get most minerals by digging them out of the ground, or "mining." Project **California Gold and California Gold Mine** (Visual Aid #8) and draw students' attention to it. Call students' attention to **Rocks and Minerals** (Information Cards #20–23), and distribute the rock samples if available. Tell students that rocks and minerals can be described by their color, size, hardness, smoothness, and shininess. The look and feel of a rock depend on the mineral or minerals that make up the rock. Point to the **Rocks and Minerals** (Granite, Information Card #21) and tell students that granite is a rock made mainly of the minerals feldspar and quartz, **Rocks and Minerals** (Feldspar and Quartz, Information Cards #20 and #23). Point to **Rocks and Minerals** (Mica, Information Card #22) and explain that this mineral is also found in granite. Tell students quartz and feldspar come in many colors. They are both smooth, and hard. As students examine the picture of granite, ask: ■ Does granite look smooth or rough? (*Rough*) ■ Is it one color or many colors? (*Many*)	**L.2.1e:** Use adjectives and adverbs… **L.2.6:** Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe…

Procedures	Common Core Standards and Applications
Step 2	
Ask students to name some ways they use rocks. (*Answers will vary, but might include in the garden, to build a wall, to play a game.*)	**SL.2.1:** Participate in collaborative conversations… **SL.2.6:** Produce complete sentences…
Step 3	
Tell students that people sometimes use rocks in the same size and shape they find the rocks in nature. People choose the rock they will use based on the way they will use it. Ask students if they ever skipped a rock across water in a lake or pond. Would they choose a rock the size of your fist with rough edges or a smooth rock that would fit in the palm of your hand? Ask students for other examples of people choosing a rock for a job based on its properties. (*Answers may include, but are not limited to: choosing flat, smooth stones to build a walkway in a yard; choosing a round, smooth rock the size of your fist to use as a paperweight.*) Ask students where and how they have seen rocks they think were left "as is" being used. List the ways/places on the board.	**RI.2.1:** …answer such questions as *who, what, where, when, why…*to demonstrate understanding of key details in a text. **SL.2.1:** Participate in collaborative conversations… **SL.2.6:** Product complete sentences…
Step 4	
Ask students, "What do people do when they cannot find rocks that are the size and shape they need for a specific purpose?" (*They use tools to change the size or shape of the rocks.*) Ask students if they have ever seen a sculpture carved out of rock. Ask if they have ever seen a building or a fence made out of rock. Ask if they have ever walked on gravel. Have students list ways they have seen rock used after people have changed the size and shape of the rock. Record their answers on the board.	**SL.2.1:** Participate in collaborative conversations… **SL.2.6:** Product complete sentences…
Step 5	
Redistribute the students' individual **Student Workbooks.** Tell them to turn to **Rock Scavenger Hunt Chart** (Student Workbook, page 5). Take students on a 10-minute tour of the school and school grounds to look for samples of how people at school use rocks. Review the chart headings with the class and tell students they are to record their findings on their charts. After completing the tour, share the results of the search. Record students' answers on the **Rock Scavenger Hunt Chart**. (*Note: An Answer Key and Sample Answers for* ***Rock Scavenger Hunt Chart*** *are provided on page 95.*)	**SL.2.1b:** Build on others' talk in conversations by linking their comments to the remarks of others. **W.2.7:** Participate in shared research and writing projects (e.g.,…record science observations). ***Suggestion:*** *Have students work in groups of 2 to 4 to look for how rock is used at school, and discuss and record data.* **W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.
Step 6	
Project **Class Results Changed/Not Changed Bar Graph** (Visual Aid #9). Tell students they will now review the list of rocks based on whether they think each rock was used "as is" or people changed the rock to fit the purpose. Fill in the appropriate box on the graph as the class assesses each item on the list. When the graph is complete, ask students if people changed the shape or size of rocks more or less often than they used rocks in the shape and size they are found in nature. (*Note: An Answer Key and Sample Answers for* ***Class Results Changed/Not Changed Bar Graph*** *are provided on page 92.*)	**SL.2.1b:** Build on others' talk in conversations by linking their comments to the remarks of others.

Procedures	Common Core Standards and Applications
Step 7	
Tell students to turn to **Rocks in Our Backyard** (Student Workbook, page 6). Review the instructions with the class. Have students complete the task independently in class, if time allows, or as homework. Collect **Student Workbooks** and use **Rocks in Our Backyard** for assessment.	**W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.

Lesson 5: Minerals at Work

Students become familiar with three properties of minerals by interpreting information on a diagram. They work in small groups to match mineral properties to specific uses of minerals pictured on cards. Students then apply their knowledge to solving simple riddles.


Lesson 5

Minerals at Work

Lesson 5

Learning Objective

Key Vocabulary

Use this correlation in place of the **Procedures** on pages 106–109 of the Teacher's Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the **Dictionary Workbook** and the vocabulary **Word Wall Cards** to introduce new words to students as appropriate.	**L.2.4e:** Use glossaries and beginning dictionaries…to determine or clarify the meaning of words and phrases **in all content areas. CA** **RF.2.3:** Know and apply…word analysis skills…**both in isolation and in text…CA**
Step 1	
Remind students that they have learned about different ways animals, plants, and humans use rocks and minerals. Explain that today they will learn more about how people use minerals. Review the definition of a "mineral." Project **Properties of Minerals** (Visual Aid #10) and explain that minerals can be described by their properties. People use different minerals because they have different properties. Point to the three properties of minerals on the chart and ask students to read the properties aloud with you. (*Color, luster, and hardness*) Point to the word "color" on the chart and ask what colors are listed. Read the words together with the class. Explain that many minerals come in more than one color. Point to the word "luster" on the chart and explain that the word "luster" describes what a mineral looks like when light is shined on it. Ask what words describe the luster of minerals. Read the words together with the class. Point to the word "hardness" on the chart and ask what words describe the hardness of a mineral. Read the words together with the class.	**RI.2.5:** Know and use various text features…to locate key facts or information…

Procedures	Common Core Standards and Applications
Step 2 *(Optional)*	
Scientists determine how hard a rock or mineral is based on what can scratch it. They use different tools to scratch a mineral to figure out how hard it is. A mineral can only be scratched by something that is harder than it is. Point out that the chart also lists things that can be used to scratch minerals to test their hardness. Read these words together as a class. (*Fingernail, penny, paperclip*) Distribute a few pennies and paperclips and select students to scratch test sample minerals and put the samples in order of hardness.	**RI.2.5:** Know and use various text features…to locate key facts or information… **SL.2.2:** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. **a) Give and follow three- and four-step oral directions…CA**
Step 3	
Explain that people use minerals in many, many ways. They choose which mineral to use for which job based on its properties. Ask students: ■ How do you think the hardness of a mineral affects the way the mineral is used? (*Soft minerals are easier to shape or break apart so they can be used for things that need shaping like wires. However, they are not strong enough to be used to build bridges or walls. Very hard minerals can be used in tools and building but may be too hard to shape into small detailed things like wires.*) ■ How do you think the color or luster of a mineral affects the way a mineral is used? (*Many minerals are used in jewelry. Their color or luster determines how much people want jewelry made from the mineral.*)	**SL.2.1:** Participate in collaborative conversations with diverse partners about *grade 2 topics*… b) Build on others' talk in conversations by linking their comments to the remarks of others. c) Ask for clarification and further explanation as needed about topics and texts under discussion. ***Suggestion:*** *Encourage the class to ask questions and to add to the information you are giving them.*
Step 4	
Organize students into groups of three. Point out the **Minerals in Use** (Information Cards #24–29). Explain that people use different minerals to make each of these items. Tell students that you are going to show photographs of different minerals that include information on some of the properties of the minerals. Project the first of the **Matching Minerals** (Visual Aids #11–16) and give groups time to read the information and select the use that matches it from the information cards on the wall. Ask students to raise their hands as soon as their group has decided on a match. When all hands are raised, ask students to identify the match and describe at least one property that makes the mineral useful for the purpose pictured. Repeat this process with the remaining **Matching Minerals** visual aids. (*Note: An Answer Key and Sample Answers for the* ***Matching Minerals*** *activity are provided on pages 108–109.*)	**SL.2.1:** Participate in collaborative conversations with diverse partners about *grade 2 topics*… b) Build on others' talk in conversations by linking their comments to the remarks of others. c) Ask for clarification and further explanation as needed about topics and texts under discussion. ***Suggestion:*** *Encourage the class to ask questions and to add to the information you are giving them.*
Step 5	
Redistribute the students' individual **Student Workbooks.** Tell them to turn to **Minerals at Work** (Student Workbook, page 7–8). Review the instructions, the words in the box, and the sample completed question with the students. Have students complete the activity independently. Collect **Student Workbooks** and use **Minerals at Work** for assessment.	**W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.

Lesson 6: People Rock!

Students investigate the roles of rocks and minerals as used by humans to manufacture products. They read an article and participate in a discussion.

Use this correlation in place of the **Procedures** on pages 130–131 of the Teacher's Edition.

Procedures	Common Core Standards and Applications
Vocabulary Development	
Use the **Dictionary Workbook** and the vocabulary **Word Wall Cards** to introduce new words to students as appropriate.	**L.2.4e:** Use glossaries and beginning dictionaries…to determine or clarify the meaning of words and phrases **in all content areas. CA** **RF.2.3:** Know and apply…word analysis skills…**both in isolation and in text…CA**
Step 1	
Tell students that today they will learn about another way people use rocks and minerals: people process rocks and minerals to manufacture new products. Ask students if they have ever been inside a factory or have seen people working in a factory on television or in a movie or book. If so, what was being manufactured in the factory?	n/a
Step 2	
Hold up a large chocolate chip or raisin cookie. Tell students the cookie is made with chocolate chips (or raisins). Have students examine the cookie. Ask students if they see the chips (or raisins.) Tell students the cookie is also made with eggs. Ask if they can see the eggs. Give two students magnifying glasses and ask them to examine the cookie. Ask, "Can you see the eggs now?" Break the cookie in half and re-examine the cookie. Ask, "Can you see the eggs now?"	**SL.2.3:** Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
Step 3	
Tell students that when we make some products, some of the ingredients can still be seen in the finished product, like the raisins (or chocolate chips). They can be pulled out of the cookie and still look like raisins (or chocolate chips). Other ingredients may not be easily seen. Once they are used to make a product, they no longer look the same and might not be able to be removed, like the eggs in the cookies.	**RI.2.3:** Describe the connection between a series of…scientific ideas or concepts…

Procedures	Common Core Standards and Applications
Step 4	
Remind students that minerals are solid and made of just one thing, while rocks are made of two or more minerals. Explain that rocks and minerals are sometimes used to make other products in ways that we can see the rock or mineral from which they came. Project **Matching Minerals** (Garnet, Visual Aid #16) to remind students what garnets looks like. The garnets in a ring are still a red mineral. The granite in our countertops is still granite. Explain that at other times, rocks and minerals are mixed with other things to make a new product. Project **Matching Minerals** (Talc, Visual Aid #15) to remind students what talc looks like. Talc is a soft mineral. Sometimes it is ground into a powder. Talc is used to make skateboards. If you look at a skateboard, you will not see the talc powder. If you break a skateboard in half, you will not see the talc powder. The powder is mixed with other things and, like the eggs in the cookie, can no longer be seen as talc.	**SL.2.3:** Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue. ***Suggestion:*** *Ask students to think of other examples where rocks and minerals are used to make other products. (Ingredients in sand are combined with other ingredients to make glass.) (Cement)*
Step 5	
Redistribute the students' individual **Student Workbooks.** Tell them to turn to **People Rock!** (Student Workbook, pages 9–11). Preview the reading with the class by reading the title and looking at the photographs. Ask students to predict what the article is about. Read the article aloud as the students follow along on their copy.	**RI.2.6:** Identify the main purpose of a text, including what the author wants to answer, explain, or describe. **SL.2.3:** Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
Step 6	
After students complete the reading, facilitate a discussion with the following questions: ■ What was the reading about? (*Jobs people have working with rocks*) ■ What types of rocks are used in the manufacturing of concrete? (*Crushed rocks*) ■ After the rocks are processed in the mix, can we take the rocks back out? (*No*) ■ What kinds of things can people make with concrete? (*Houses, schools, stores, sidewalks, swimming pools, bird baths*) ■ What kind of rock or mineral is used to make glass? (*Sand*) ■ Can we see sand in the glass after it is processed? (*No*) ■ What are some products people make with glass? (*Doors, windows, drinking glasses, eye glasses, jars, bottles, beads, light bulbs*) ■ What do we need to make steel? (*Iron ore*) ■ What are some products people make with steel? (*Tall buildings, cars, tools, bridges, golf clubs, toasters*) ■ What does someone have to do to iron ore to manufacture steel? What does someone have to do to sand to manufacture glass? (*Iron ore and sand are subjected to high heat to make steel and glass.*)	**RI.2.3:** Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. **RI.2.4:** Determine the meaning of words and phrases in a text relevant to a *grade 2 topic or subject area*… **RI.2.6:** Identify the main purpose of a text, including what the author wants to answer, explain, or describe. **SL.2.1:** Participate in collaborative conversations with diverse partners about *grade 2 topics*… b) Build on others' talk in conversations by linking their comments to the remarks of others.

Procedures	Common Core Standards and Applications
Step 7	
Tell students to turn to **Rocks and Minerals We Use** (Student Workbook, pages 12–14). Review the instructions and the photographs with students. Ask if they know what each item is. Tell students to complete the chart independently in class. Collect **Student Workbooks** and use **Rocks and Minerals We Use** for assessment.	**SL.2.1:** Participate in collaborative conversations with diverse partners about *grade 2 topics*… **W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.

Unit Assessment

Refer to the introduction pages at the front of this document for information regarding the Traditional and Alternative Assessments for this unit and their common core correlations.

California Common Core State Standards Descriptions

Language Standards

- **L.2.1:** Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
  - e) Use adjectives and adverbs, and choose between them depending on what is to be modified.
- **L.2.4:** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 2 reading and content*, choosing flexibly from an array of strategies.
  - e) Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases **in all content areas**. **CA**
- **L.2.6:** Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., *When other kids are happy that makes me happy*).

Reading Foundational Skills Standards

- **RF.2.3:** Know and apply grade-level phonics and word analysis skills in decoding words **both in isolation and in text**. **CA**

Reading Standards for Informational Text

- **RI.2.1:** Ask and answer such questions as *who, what, where, when, why,* and *how* to demonstrate understanding of key details in a text.
- **RI.2.2:** Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
- **RI.2.3:** Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- **RI.2.4:** Determine the meaning of words and phrases in a text relevant to a *grade 2 topic or subject area*. **(See grade 2 Language standards 4–6 for additional expectations.) CA**
- **RI.2.5:** Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
- **RI.2.6:** Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
- **RI.2.7:** Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
- **RI.2.10:** By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Speaking and Listening Standards

- **SL.2.1:** Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.
  - a) Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
  - b) Build on others' talk in conversations by linking their comments to the remarks of others.
  - c) Ask for clarification and further explanation as needed about the topics and texts under discussion.
- **SL.2.2:** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
  - **a) Give and follow three- and four-step oral directions. CA**
- **SL.2.3:** Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
- **SL.2.6:** Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 2 Language standards 1 and 3 for specific expectations.)

Writing Standards

- **W.2.2:** Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
- **W.2.7:** Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
- **W.2.8:** Recall information from experiences or gather information from provided sources to answer a question.